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5 May 1964

MEMORANDUM FOR THE RECORD**SUBJECT: Trip Report for Period of 20-25 April 1964**

Initially this trip was scheduled for testing the Stellar Comparator, at the [redacted] prior to its being sent to the [redacted]. However, during a discussion with [redacted] on 16 April it was concluded that the visit would be necessary to determine progress made in the laser measuring unit and instrument fabrication. The laser measuring device was provided by [redacted]

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[redacted] The progress made in the use of the laser was quite disappointing and as a result [redacted] is no longer involved in the project. Counting could be accomplished only in one direction and the bidirectional capability seemed to be dependent on a rather simple check of identical circuit cards. This was to be accomplished during the week of 26 April. [redacted] suggested that an order be placed for the Ferranti fringe and detecting heads to serve as a back-up measuring system to the laser unit. After a telephone conversation with [redacted] all agreed that this would be a reasonable approach. As far as the rest of the instrument was concerned, about 90% of the circuit boards were complete but the bays still had to be wired and the mechanical assembly of the instrument would take about two weeks for completion. Since the Ferranti fringe system will require approximately six weeks for delivery, it is presumed that this period is more than adequate for the assembly of the instrument. Approximately two or three days are required for alignment of the fringes thus the instrument should be ready for a plant inspection by the first week in June. [redacted] has scheduled a trip to the [redacted] for either the first or second week in May. [redacted] were present at the [redacted] on Tuesday, 21 April. [redacted] comments are attached to this report.

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On Wednesday a trip was made to the [redacted] for the purpose of determining the feasibility of incorporating electronic alignment of transparencies into the Multiple Image Correlator. I met with [redacted]

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and discussed the MIC in detail with them. Their conclusions were that it may be cheaper to design an instrument with this in mind rather than attempting to modify existing equipment. They saw no reason however, why electronic alinement through error signals relayed to servomotors would not increase the alinement capability of the MIC. In conclusion, it was their feeling that at least a 1/3 better alinement could be accomplished by this method.

I also met [] the General Manager of the [] services in photointerpretation for determining the economic capabilities of an area. This program would be based on analyses of areas in California engaged in various activities such as agriculture, mining, etc., and correlated to other areas of interest. [] stated that he would be in Washington around mid-May and would like to discuss the project with [] and possibly Mr. Lundahl.

Note: The only letter I could find in our files was dated 22 March 1963 and signed by [] It covered the economic and cultural potential surveys of areas of interest.

On Thursday, 23 April, I visited the [] of Los Angeles, California. This visit was made in response to [] request for a study of remote writing equipment. I met a [] who demonstrated the various types of equipment available. The regional representation for the East is []

[] At present, [] has a GSA contract [] which would simplify for us the acquisition of supplies and parts for these items. Brochures are included with this report. Other companies to be considered are [] and []

In the afternoon a visit was made to the [] to determine if any of their panels produced enough light to be used as light sources in viewing tables and if there was a possibility for differential lighting within the panel area. Essentially, the panels are of low light intensity anywhere from 1 1/2 foot-lamberts to a maximum of 15 foot-lamberts. They usually operate on a 115 V, 400 cycle current, produce approximately 6 foot-lamberts of illumination and came in various shades of green. Green phosphor was chosen because of its uniform grain size, other colors had been tried but without much success. [] stated that he will have a display at the American Helicopter Society (AHS) meeting at the Sheraton-Park or Shoreham Hotel during April 14-15.

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Incidentally, circular luminescent panels have been installed in Harold's Club in Reno in case anyone is interested in them.

The meeting with [] was scheduled and held on Friday morning. According to [] a statement should be forthcoming through him concerning the status of the RFP for the MIC during the week of 3 May 1964. Other items discussed were the P.I. console, which now offers four motorized film drives, a capability for viewing stereo images separated 1 1/2 to 8 1/4 inches, a stereo microscope that has a zoom capability of 5x-48x with 5x, 10x and 15x eyepieces and can resolve 2001/mm at 32x. Cost of the consoles range from [] for two motorized film transports to [] for four motorized film transports - both with a 27 inch take-up loop. The 8 1/4 inch take-up loop capability costs approximately \$400 extra. The measuring capability of the table is + 10 microns over a one inch square in both the x and y directions. Another item was a dual viewing microscope mounted on a two position light table. Operator and assistant were seated opposite to one another and viewed the same area. This possibly could be used for training or demonstration. Also mentioned was the feasibility of adding a 3x-6x front projection screen to the P.I. console to view areas at low magnification prior to any detailed high magnification search with the microscope which is adjacent to the screen. Screen dimensions could be approximately 30" x 30".

Friday afternoon was spent with [] While there we discussed, with [] the difficulties we were having with the Spectro-Physics laser unit. After a thorough explanation of the unit by [] he suggested methods of achieving the best fringe display to obtain an accurate count through the detecting head and associated electronics.

On Saturday, I met with [] and discussed the alignment procedures with them. At this time I learned that two Spectro-Physics representatives had been there Friday night to loan them one of their laser units and to align it for them. Fringe count worked in one direction on one axis but the circuit of the bidirectional counter would not continue the count in the other direction. These circuits would have to be checked and corrected. This circuit would be duplicated, when corrected, for the other axis. The divide by six counter circuits was completed and operational however a duplicate would be made and used for the other axis. As has been

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stated, the bidirectional counter was operational in one direction and, from the information received from [redacted] all that remained was a rather simple circuit check to make it operational.

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[redacted]
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